

CLAIMS

We claim:

1. A toner cartridge, comprising:
 - a housing which defines a toner reservoir; and
 - a rotatable endless belt disposed within the toner reservoir.
2. The toner cartridge of claim 1, and wherein the toner reservoir is defined by a reservoir primary surface within the housing, and further wherein the rotatable endless belt is positioned proximate the reservoir primary surface.
3. The toner cartridge of claim 2, and further wherein the rotatable endless belt is in contact with the reservoir primary surface.
4. The toner cartridge of claim 1, and wherein the rotatable endless belt has openings disposed therein to allow toner to pass therethrough.
5. The toner cartridge of claim 4, and wherein the openings are longitudinal slits.
6. The toner cartridge of claim 4, and wherein the rotatable endless belt is fabricated from a material comprising neoprene.
7. The toner cartridge of claim 4, and wherein the rotatable endless belt comprises a plastic mesh.
8. The toner cartridge of claim 7, and wherein the plastic mesh comprises an extrusion.
9. The toner cartridge of claim 4, and wherein the rotatable endless belt comprises a plurality of plastic strands which are fused to one another at random sites along the fibers.

1 10. The toner cartridge of claim 2, and wherein the rotatable endless belt is defined
2 by an outer belt surface which is proximate the reservoir primary surface, the rotatable
3 endless belt further comprising a plurality of scraping members which protrude from the
4 outer belt surface.

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6 11. The toner cartridge of claim 2, and wherein the rotatable endless belt is defined
7 by an outer belt surface which is proximate the reservoir primary surface, and an inner
8 belt surface which is opposite the outer belt surface, the rotatable endless belt further
9 comprising a plurality of stirring members which protrude from the inner belt surface.

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11 12. The toner cartridge of claim 2, and wherein the rotatable endless belt is defined
12 by an outer belt surface which is proximate the reservoir primary surface, and an inner
13 belt surface which is opposite the outer belt surface, and wherein at least one of the
14 outer belt surface or the inner belt surface is roughened.

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16 13. The toner cartridge of claim 2, and further comprising a plurality of rollers which
17 support the rotatable endless belt in proximity to the reservoir primary surface.

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19 14. The toner cartridge of claim 13, and wherein the housing is defined by an exterior
20 surface, the toner cartridge further comprising a drive connection connected to one of
21 the rollers and disposed proximate the exterior surface of the housing.

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23 15. The toner cartridge of claim 13, and wherein the housing is defined by an exterior
24 surface, the toner cartridge further comprising:

25 a drive connection connected disposed proximate the exterior surface of the
26 housing; and

27 a drive system which is driven by the drive connection and engages the plurality
28 of rollers to thereby allow the drive connection to be used to drive all of the rollers.

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30 16. The toner cartridge of claim 15, and wherein the drive system comprises a central
31 driving wheel in contact with a plurality of secondary driving wheels, and each secondary
32 driving wheel is in contact with a corresponding one of the plurality of rollers.

1 17. An imaging apparatus, comprising:

2 a toner reservoir housing which defines a toner reservoir; and

3 a rotatable endless belt disposed within the toner reservoir.

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5 18. The imaging apparatus of claim 17, and wherein the rotatable endless belt has
6 openings disposed therein to allow toner to pass therethrough.

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8 19. The imaging apparatus of claim 17, and further comprising an antechamber in
9 fluid communication with the toner reservoir, the antechamber having an inlet opening to
10 receive dry toner therethrough.

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12 20. The imaging apparatus of claim 18, and wherein the rotatable endless belt is
13 supported in the toner reservoir by a plurality of rollers, and further wherein one of the
14 rollers is driven by a rotary drive to thereby allow the rotatable endless belt to be rotated.

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16 21. A toner cartridge, comprising:

17 a housing which defines a toner reservoir, the toner reservoir being defined by a
18 toner reservoir primary surface and a toner reservoir egress area;

19 a toner distribution roller located proximate the toner reservoir egress area;

20 a toner agitator belt disposed within the toner reservoir and located in proximity to
21 the toner reservoir primary surface, the agitator belt having perforations therein to allow
22 toner to pass through the belt to the toner reservoir egress area.

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24 22. The toner cartridge of claim 21, and wherein the toner agitator belt is defined by
25 an outer belt surface which is proximate the reservoir primary surface, and an inner belt
26 surface which is opposite the outer belt surface, and wherein the housing is defined by
27 an exterior surface, the toner cartridge further comprising:

28 a drive roller in contact with the inner belt surface;

29 a drive connection connected to the drive roller and disposed proximate the
30 exterior surface of the housing.

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32 23. The toner cartridge of claim 22, and further comprising first and second idler
33 rollers in contact with the inner belt surface.

1 24. A toner cartridge comprising:

2 means for housing a supply of toner, said means for housing the supply of toner
3 defining a non-cylindrical mixing region defined by a periphery; and

4 means for engaging at least a portion of the toner at the periphery of the non-
5 cylindrical mixing region for agitating the toner.

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7 25. A method of agitating toner, comprising:

8 placing toner in a reservoir; and

9 engaging at least a portion of the toner in the reservoir with an endless belt.

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